



Editor/Author: T. Ashley Burns

Our thoughts are with the families across the state of South Carolina who have been impacted by the devastating rains and flooding this past weekend. Please, be safe as you move around the state and begin recovery efforts. Several of our Extension offices are still closed. Informational resources for those affected by the floodwaters: [http://www.clemson.edu/public/disaster\\_response/flood-resources.html](http://www.clemson.edu/public/disaster_response/flood-resources.html) or [http://www.clemson.edu/public/disaster\\_response/october\\_2015\\_flood.html](http://www.clemson.edu/public/disaster_response/october_2015_flood.html)

## 4-H Day at the Fair



Saturday October 24, 2015

Bring your **4-H Membership Card** (can be picked up from your local Extension office) & **wear a 4-H T-shirt** to get in the fair free!

- Healthy Lifestyles – Moore Building
- Junior Beef Cattle – Nutt Cattle Arena
- 4-H Exhibit – Ellison Building
- **Roll Call – In front of the Ellison Building @ 12 pm**



## National 4-H Week is HERE!!!



We are embarking on a new campaign, 4-H Grows. As part of National 4-H Week, we celebrate all the qualities and skills that 4-H promotes in our youth: Resilience, Confidence, Compassion, Curiosity, Teamwork, Character, Creativity, Courage, etc. Share your 4-H story with someone this week! National Youth Science Day Experiment is also this week, October 7<sup>th</sup>. Our 4-H Exhibit will be centered around this theme of "Commotion Motion" for vehicle and driver safety.



Link to NYSD video: <https://www.youtube.com/watch?v=3idZLemTqkl&feature=youtu.be>



## Tractor Supply Clover Campaign

October 7-18<sup>th</sup> marks Tractor Supply's Paper Clover Campaign fundraiser. All funds raised through this effort will go to 4-H, including your local 4-H

Program! You can work with your local Tractor Supply stores to raise awareness of this campaign in your community.



# Monthly 4-H Club Activity Idea

written by C.H. Holland, UPIC Intern

## The Importance of Clean Water

**Objective:** To involve youth in natural resource education and help them learn that the choices they make have an affect on the world around them. These activities will help youth focus on actions they can take to help the Earth and avoid overloading it with additional environmental issues. Teaching children to value clean water and care for trees will help them feel more connected to nature.

**Age Range:** Senior-level 4-H'ers; once assembled, filtration devices can be demonstrated by 4-H'ers to younger audiences

**Hands-on Activity:** Making "clean" water using recycled resources and/or conducting a soil erosion experiment.

## Leading Questions & Information

### Where does the water out of the faucet come?

Most people don't know that their water comes from local reservoirs.  
(Ex.- A local reservoir in the Clemson area is Lake Hartwell)

### What are some sources of water pollution?

Trash and plastics, as well as chemical dumping and Stormwater runoff, sewage, etc.

### What do you use clean water for on a daily basis?

Bathing, brush teeth, cooking, drinking, etc.

### What is something that you can do everyday to preserve our sources of clean water?

Turn the faucet off when not in use, be conservative, potential of rain barrels, rain gardens etc.

### What is the process that river water goes through to become drinking water?

1. Intake- taking the water out of the river.

Primary: (Physical settling and removal of particulate matter)

2. Clarification- making the water cleaner using clarification tanks.

3. Filter- taking out any additional bits of sediment and other particulate matter.

Secondary: (Chemical and biological methods)

4. Disinfection- removing germs.

5. Distribution- sending clean water to our homes, schools, and work places.

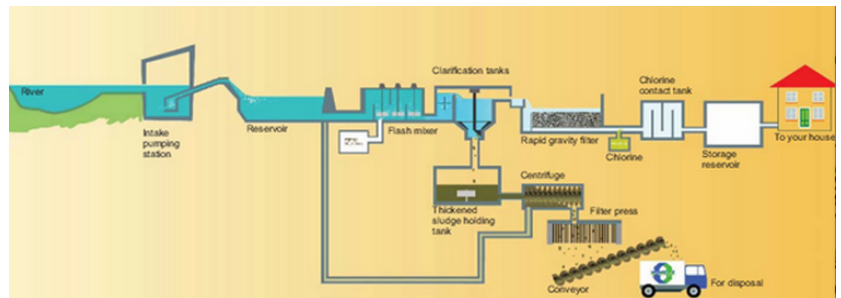
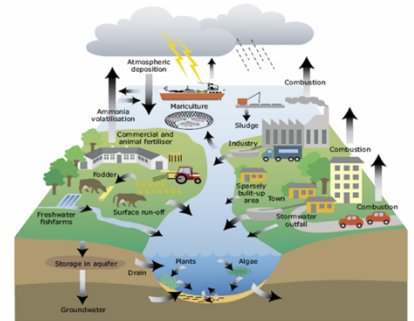
### What role do plants play in having clean water?

The U.S. Environmental Protection Agency has named stormwater as our nation's biggest water quality threat. Storm water runoff whisks pollutants from our streets to our lakes and streams

via storm drains.

Planting for Clean Water is part of the solution to water pollution because it mimics nature and natural hydrology. In natural landscapes, rain tends to soak into the ground gradually. However, nowadays, much of the land is covered by impervious (not allowing fluid to pass through) surfaces - such as streets, parking lots and roofs - where the water cannot soak into the ground. Plant structures help infiltrate water back into the ground, filter it, and stop the storm water runoff. For more information on Stormwater management, visit:

[http://www.clemson.edu/public/carolinaclear/consortiums/pickens\\_home/index.html](http://www.clemson.edu/public/carolinaclear/consortiums/pickens_home/index.html)



ANDERSON & PICKENS COUNTIES  
**stormwater**  
**PARTNERS**  
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# Hands-on Activities: How To

## Soil Erosion Experiment

### Needed Materials:

- 6 empty 2-L bottles
- Plywood or thick cardboard (approx. 18"x12")
- Wood glue or adhesive
- Sharp Scissors/ Knife\*
- String
- Soil
- Mulch (bark chips, dead leaves, and sticks)
- Water
- Food coloring (optional)

### Step 1\*:

Cut a rectangular hole in three of the coke bottles (permanent marker can serve as a guide).

### Step 2:

Secure bottles to plywood or cardboard using wood glue or other adhesive to stick bottles to the base. Make sure that the neck of each bottle is protruding over the edge of the board by 3-4 inches.

### Step 3:

Fill the first bottle with **soil**, the second with **soil and mulch**, and in the third bottle, fill with soil and add a **small plant**. Planting can be done during the club meeting with small plants, such as herbs and annuals that have already been started (by the September 2015 Monthly Activity) or grass seed can be planted approximately 2 weeks in advance of the activity. Ryegrass is often recommended for erosion control due to its rapid germination (5-14 days) and early growth. Just a handful of seed will be more than enough to fill your bottle! Ryegrass is

### Step 4\*:

Cut the remaining 3 bottles in half horizontally keeping only the bottom half. With the knife (or a hole punch), make two small holes opposite one another at the top of your cut bottle. Thread the string through each hole and tie each end securely. Now, the string holding your newly made "buckets" can be looped over the neck of your soil-filled bottles. It will collect water.

### Step 5:

Slowly pour equal amounts of water into each of the 3 matter filled bottles. Get your students to take note of the color of the water collecting in the "buckets". The water from the soil filled bottle should be really dirty. The water from the mulch-filled and plant-filled bottles is much cleaner showing how mulch and root structures assist in preventing soil erosion and runoff.

### Optional Step 6:

Allowing your kids to repeatedly pour water through these bottle systems will show how the soil in the first container erodes away. The plants, however, are nature's glue and hold the soil in place, further preventing erosion and runoff. Also, use food coloring to dye the water you pour through your bottle system to see if color is removed.

**\* Cutting plastic bottles can be hazardous; therefore, we recommend that adult leaders cut bottles in advance of the activity.**

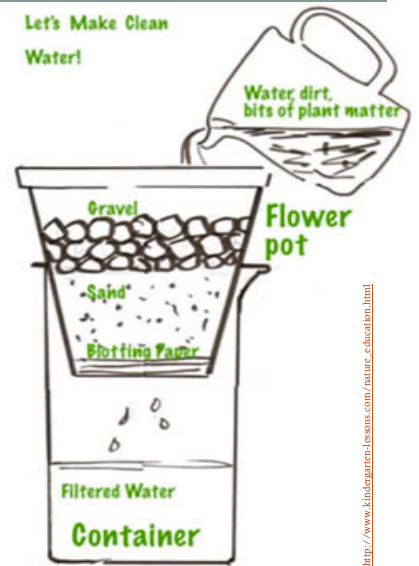


### Making Clean Water Experiment

#### Needed Materials:

- Various recycled containers
  - Scissors/Knife\*
  - Glue/tape
  - Filters (coffee filters, cotton balls, fabric, etc.)
  - Large Gravel
  - Small Rocks
  - Sand
  - Collection container
  - Water
- } Serve as sediment

**Disclaimer:** Even though the water may appear clear and is filtered, do not allow youth to drink the water! Extra purification steps are required to make the water safe for human consumption. Examples of these include boiling the water and using iodine tablets to make it potable.



#### Step 1:

Allow the youth to be creative and decide which bottles they will use and what design their water filter will have. They can work individually, but we recommend working in small groups to develop collaboration and team-building skills!

#### Step 2\*:

Once you approve their design allow youth to assemble and secure their bottles. This is a time for your youth to be creative and flexible. Sometimes, implementation of their design will lead to a redesign.

**\*Assist with cutting when necessary; it can be hazardous!**

#### Step 3:

Youth can add their sediment and filter layers once their device is assembled. You can supervise everything being put in the correct order. The filter should be on the bottom, topped with sand, then small rocks, then large gravel. Why is the order important? (You can experiment by reversing the order of the sediment and see how it affects the flow and clarity of the water that is poured through.) Before adding water, you may want to move outdoors or into a large sink!

#### Step 4:

Once students are ready to test their homemade filtration devices you pour water in the top and let it flow through to the container. Have students compare their filtered water and make some friendly competition. You can make the demonstration more impactful by starting with really 'dirty' water. Use a scoop of dirt/clay soil in your test water and shake it up well before pouring over the filtration units. Or, if you perform the Soil Erosion Experiment, you can use the spent water from the soil-only bottle. (Also, you can experiment with food coloring, as in the Soil Erosion Experiment.)

Even though the water may appear clear and is filtered, do not allow youth to drink the water. Extra purification steps are required to make the water safe for human consumption.

For additional information, fact sheets, and information on water quality programs check out Carolina Clear;

<http://www.clemson.edu/public/carolinaclear/>

